

REMARKS

This is a full and timely response to the Office Action mailed July 27, 2006, submitted concurrently with a Request for Continued Examination and a one month extension of time to extend the due date for response to November 27, 2006.

Claim 4 has been amended to incorporate the limitations of claim 8 and to more particularly define the present invention. Further, claims 6, 7, 9 and 10 have been amended to put the claims in better form under U.S. practice. Still further, claims 8 and 11-18 have been canceled without prejudice or disclaimer to their underlying subject matter. Lastly, claims 19-21 have been added to further protect specific embodiments of the present invention. Support for the claim amendments and new claims can be found throughout the specification and the original claims. Thus, claims 4, 6, 7, 9, 10 and 19-21 are pending in this application.

In view of this amendment, Applicants believe that all pending claims are in condition for allowance. Reexamination and reconsideration in light of the foregoing amendments and the following remarks are respectfully requested.

Rejection under 35 U.S.C. §103

Claims 4 and 6-18 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Burke (U.S. Patent 5,620,678), in view of Dohara et al. (U.S. Patent 5,055,299) and Boe (U.S. Patent 2,524,590). With regard to claims 11-18, this rejection has been rendered moot in view of the cancellation of these claims. With regard to the remaining pending claims, Applicant respectfully traverses this rejection.

To establish a *prima facie* case of obviousness, the following three criteria must be satisfied. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Here, in this case, based on Applicant's review of the cited references and the Examiner's comments, Applicant submits that the above criterias have not been satisfied.

The claims have been amended to further emphasize the distinctions between the present invention and the cited reference. Amended claim 4 further limits the flash point of the oil ingredient and the polyol. This is due to the fact that when the temperature of the concentrate rises, the vapor of the water accumulated around the concentrate and prevents the flash of the concentrate. Further, the amount or the ratio of the water, the oil ingredient, and the polyol prevent the flash of the concentrate, even at the flash point of the oil ingredient which is 60°C or higher.

As stated on page 4 of the specification, the oil, polyol and water are compounded in a concentrate **in a specific proportion** so that the concentrate has no flame point under 1 atmospheric pressure. Such a concentrate is combined with a propellant consisting of dimethyl ether so that the resulting composition **forms a uniform phase**. Applicant believes that none of the cited references either alone or in combination teach or suggest such aspects of the present invention.

Burke does not teach or suggest polyols and requires that water or its equivalent (such as Isopar L) be present in an amount of 33-43% by weight. The Examiner has interpreted the amount of water taught in Burke to be in the range of 0-65%. However, Applicant believes that such an interpretation is incorrect since in Example VI, Burke specifically teaches that Isopar L, an isoparaffin petroleum distillate, operates in the same manner as water in the preceding examples. Thus, one skilled in the art would not be motivated to use water at below 33% since Burke specifically requires a diluent be present in the amount of 33-43%.

Still further, Burke discloses a water-based or solvent-based aerosol insecticide and its components are as follows.

- (1) Diluents (water or petroleum distillates)
- (2) Insecticide, which is insoluble in the diluents
- (3) DME

Burke also discloses that it may preferably include a co-solvent of isopropyl alcohol, 1-methyl-2-pyrrolidinone, and a combination thereof. In addition, Burke also discloses in the specification that the aerosol composition can be water-based, or solvent-based, or a combination thereof (see column 2, lines 37-38, of Burke). Thus, it may be arguable that the aerosol composition of Burke can include both water and petroleum distillates at the same time.

However, as it is well known in the art, water and petroleum distillates are insoluble to each other, and the insecticide of Burke is insoluble to the diluents. This, in turn, means that the aerosol composition of Burke comprising both water and petroleum separates into three phases after spraying (i.e. water, petroleum distillates, and insecticide). Such an effect clearly contradicts the effect or action of Burke's aerosol composition. Burke discloses in the specification that its aerosol composition separates into two phases after spraying (see column 2, lines 7-10, of Burke). Further, none of the examples provided in Burke comprises both water and petroleum distillates. Thus, Applicant believes that an aerosol composition comprising both water and petroleum distillates is not disclosed in Burke.

Applicant also believes that Burke does not teach an aerosol composition where the DME vaporizes in the air and forms a hydrophilic liquid combination of water and polyol, and an oleophilic liquid combination of the active ingredient and oil ingredient. In column 4, line 67, of Claim 1, Burke states that its aerosol composition forms a homogeneous liquid solution under pressure within an aerosol can, and upon release, the DME flashes and the two phase system are formed. Burke also states that the co-solvents including isopropyl alcohol flashes upon release.

Burke believes that its aerosol composition possesses good killing capabilities for flying and crawling insects since the insecticide (which is not diluted by either diluents or co-solvents) adheres to the insects. However, Applicant believes that because only the particles of the insecticides are diffusing in the air after spraying (besides the particles of the diluents which is separated from insecticides), the adherability of Burke's aerosol composition to the insects is low which lowers its kill capabilities. To improve the killing capabilities of Burke's aerosol composition, the quantity of the insecticide will have to be increased which will present a danger to public health.

Hence, Applicant believe that Burke does not disclose an aerosol composition where the DME vaporized in the air and forms a hydrophilic liquid combination of water and polyol, and an oleophilic liquid combination of active ingredient and the oil ingredient. In contrast, the aerosol composition of the present invention diffuses in the air as oleophilic liquid of the active ingredient where the amount of the oil ingredient is 30 to 90 % of component (a). As a result, there are enough

particles to kill the insects or objects. Thus, Applicant believes that the effect of the aerosol composition in Burke is very different than the aerosol composition of the present invention.

In short, Applicant believes that the Burke does not teach or suggest any aerosol composition that includes all the elements required by the claims (i.e. (i) oil ingredient, (ii) polyol, (iii) water, and (iv) active ingredient). Further, Burke does not teach or suggest the aerosol composition wherein component (b) DME vaporizes in the air and component (a) separates in the air into a hydrophilic liquid combination of polyol and water, and an oleophilic liquid combination of the active ingredient and oil ingredient after spraying.

Such deficiencies in Burke are not cured by the teachings and suggestions of Dohara et al. Dohara et al. discloses a water-based insecticidal aerosol wherein its components are as follows.

- (1) Insecticide (pyrethroidal)
- (2) Organic solvent
- (3) The buffer solution
- (4) DME

Further, in the specification, Dohara et al. also discloses isopropanol, propyleneglycol and other polyol equivalent as organic solvents. Thus, Dohara et al. is directed to mono-layer liquid phase type water-based insecticidal aerosols which prevents corrosion without lowering the effect of the aerosol as an insecticide.

However, although Dohara et al. does disclose polyol as a solvent (group III), it does not disclose the oil ingredient of the present invention which separates from water after spraying. Hence, the polyol described in Dohara et al. is a solvent of the active ingredient, and the polyol and insecticide do not separate upon release.

Further, none of the examples in Dohara et al. comprises all the elements required by the claims (i.e. (i) oil ingredient, (ii) polyol, (iii) water, and (iv) active ingredient). So Applicant believes the Dohara et al. does not teach or suggest any aerosol composition that includes (i) oil ingredient, (ii) polyol, (iii) water, and (iii) active ingredient.

With regard to the cited reference, Boe, Applicant believes that the teachings of this reference are irrelevant to the present invention since it is directed to a dry-cleaning soap emulsion which possesses completely different components. The fact that such an emulsion in Boe is non-

inflammable does not read on the limitation “*wherein the component (a) does not have a flash point under 1 atmosphere of pressure*” since Boe’s emulsion does not read on component A of the present claims.

Boe discloses an aerosol composition that forms an emulsion. The Examiner has alleged that Boe teaches the addition of water would eliminate flammability. However, the amount of the water does not affect the condition of the emulsion. Only the emulsion breaker which dissolves both in water and oil, such as lower alcohol (ethanol, isopropyl alcohol, etc) and dimethyl ether breaks the emulsion.

On the other hand, in a single-phase aerosol solution having hydrophilic liquid and oleophilic liquid that is maintained in a single-phase solution in the container by DME, and that is separated after spraying, the distribution of the components ((i) oil ingredient, (ii) polyol, (iii) water, and (iv) active ingredient) is very limited. Thus, the method to eliminate the flammability for an emulsion solution can not be used for the solution having certain amount of hydrophilic liquid and oleophilic liquid that is maintained in single-phase solution in the container by DME, and that is separated after spraying.

The Examiner has alleged that it is obvious to a person of ordinary skill in the art at the time of the invention to replace the isopropanol of the aerosol composition of Burke to polyol which is a co-solvent equivalents of isopropanol disclosed in Dohara et al. Although the Applicant disagree with the Examiner’s argument in this regard, even if the isopropanol of the aerosol composition of Burke is replaced with polyol, the aerosol composition will still not comprises all the elements required by the claims (i.e. (i) oil ingredient, (ii) polyol, (iii) water, and (iv) active ingredient).

In addition, if isopropanol is replace with polyol in the aerosol composition of Burke and if polyol vaporizes after spraying like the isopropanol in Burke, the aerosol composition of Burke will separate into insecticide and diluents like the original Burke composition. However, if the polyol does not vaporize after spraying, the modified aerosol composition of Burke (isopropanol replaced with polyol) will separate into two phases (i.e. one phase diluents, and the second phase insecticide and polyol). Such results are clearly different from that of the present invention.

Thus, Applicant believes that the combination of Burke, Dohara et al. and Boe fail to teach the aerosol composition of the present claims which requires all the element (i) oil ingredient, (ii) polyol, (iii) water, **and** (iv) active ingredient. Further, the combined teachings of the cited references does not teaches the feature where component (b) (DME) vaporizes in the air and component (a) separates in the air into a hydrophilic liquid combination of polyol and water, and an oleophilic liquid combination of the active ingredient and oil ingredient after spraying.

Thus, for these reasons, withdrawal of the present rejection is respectfully requested.

CONCLUSION

For the foregoing reasons, all the claims now pending in the present application are believed to be clearly patentable over the outstanding rejections. Accordingly, favorable reconsideration of the claims in light of the above remarks is courteously solicited. If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the below-listed number.

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Respectfully submitted,

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